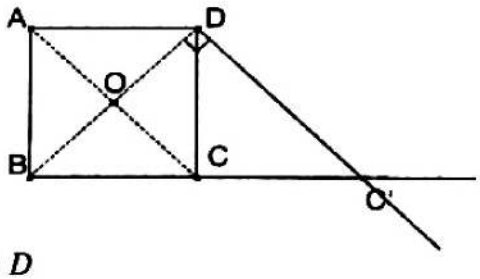
2) $f_{(M)} = N$

$\Longrightarrow \overrightarrow{HM} \perp \overrightarrow{HN}$

$\Longrightarrow$ H ∈ Cercle de diamètre $[MN]$

de même : A ∈ cercle de diamètre $[MN]$.

EXERCICE 5 :



$\begin{cases} S_{(D)} = D \\ S_{(O)} = C \end{cases}$

1) $\frac{DC}{Do} = \frac{1}{\cos\frac{\pi}{4}} = \sqrt{2}$

$(\overrightarrow{DO}, \overrightarrow{DC}) = \frac{\pi}{4}(2\pi)$

S est de rapport $\sqrt{2}$ d'angle $\frac{\pi}{4}$

2) S(A)=B car $\begin{cases} DB = \sqrt{2}\,DA \\ (\overrightarrow{DA}, \overrightarrow{DB}) = \frac{\pi}{4}(2\pi) \end{cases}$

3) soit $C' = S_{(C)}$

O=A*C $\Longrightarrow$ S(O)=S(A)*S(C)

$\Longrightarrow$ C=B*C'

$\Longrightarrow$ C'=S_C (B)

EXERCICE 6:

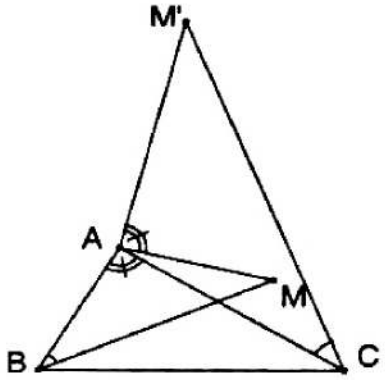
1) M ∉ (AB)

S Conserve les mesures des angles orientés d'où

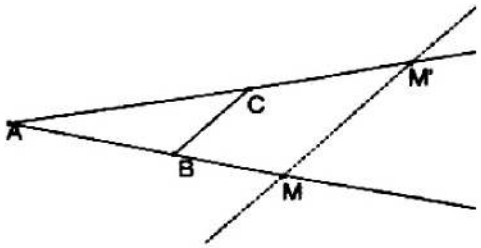
$(\overrightarrow{BA}, \overrightarrow{BM}) = (\overrightarrow{CA}, \overrightarrow{CM'})\ (2\pi)$

Et $(\overrightarrow{AB}, \overrightarrow{AC}) = (\overrightarrow{AM}, \overrightarrow{AM'})\ (2\pi)$

Voir figure:

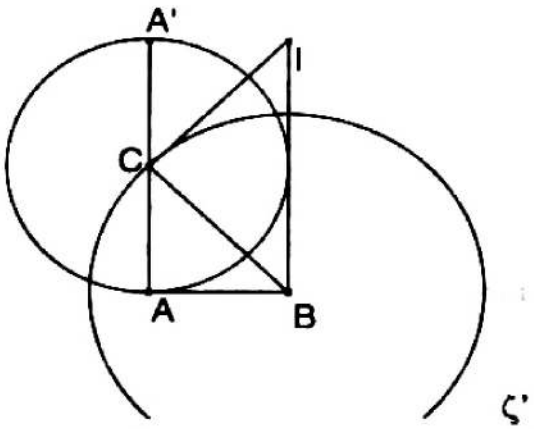


2) M∈ (AB)\ $\{A, B\}$



(MM') // (BC) et M' ∈ (AC)

EXERCICE 7



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1) a) $\begin{cases} S_{(A')} = C \\ S_{(C)} = B \end{cases}$

$\frac{CB}{A'C} = \frac{CB}{AC} = \frac{1}{\cos\frac{\pi}{4}} = \sqrt{2}$

$(\overrightarrow{A'C}, \overrightarrow{CB}) = (\overrightarrow{CA}, \overrightarrow{CB})\ (2\pi)$

$= \frac{\pi}{4}(2\pi)$

D'où S est de rapport $\sqrt{2}$ d'angle $\frac{\pi}{4}$

b) S(AC)= S(A'C)=(BC)

2) a)

$S_{(C)}$= B $\Longleftrightarrow \begin{cases} IB = \sqrt{2}.IC \\ (\overrightarrow{IC}, \overrightarrow{IB}) = \frac{\pi}{4}(2\pi) \end{cases}$

D'après le théorème d'ELKASHI

$BC^2 = IC^2 + IB^2 - 2IB.IC.\cos\hat{I}$

$BC^2 = IC^2 + (\sqrt{2}.IC)^2 - 2(\sqrt{2}).IC^2.\cos\frac{\pi}{4}$

$\Longrightarrow BC^2 = IC^2 + 2IC^2 - 2\sqrt{2}.\frac{\sqrt{2}}{2}.IC^2$

$\Longrightarrow BC^2 = IC^2 + 2IC^2 - 2IC^2 \Rightarrow CB = CI$

Carray.tn -Aqra Blech- Carray.tn